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(54) System and method for supporting distributed computing mechanisms in a local area network server environment

(57) LAN server machines are configured to utilize their existing mechanisms to pass generic security subsystem (GSS) distributed computing environment (DCE) credentials. The server management block (SMB) protocol is extended to facilitate exchange of such credentials wherein the server utilizes the GSS API interface to obtain and validate such credentials. The GSS interface provides tokens which encapsulate all necessary information to perform mutual authentication between the client and server.

A new protocol level is defined with respect to such SMB protocol extensions which includes a new protocol name exchanged in the negotiate protocol (NP) SMB. Pre-existing LAN servers will turn on a bit in the SMB_Secmode field in the NP response indicating that the server supports exchange of secpkgX SMB. The server will then wait for an SMB secpkgX or SMB sess-setupX response. The former response will permit the user/client and server to exchange GSS tokens utilizing a conventional LAN server mechanism and to thereby and mutually authenticate.

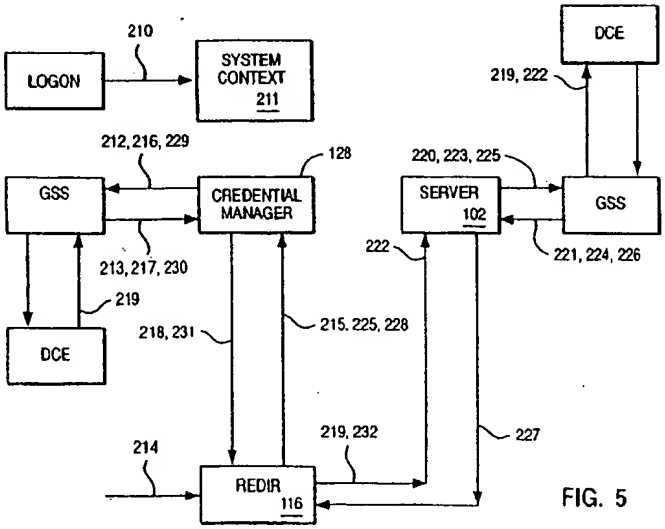

FIG. 5

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(54) Centralized cerificate management system for two-way interactive communication devices in data networks

(57) The present invention discloses a method for managing centralized certificates in a proxy server device (114) for a plurality of thin client devices (302, 304, 306) coupled thereto through a data network (102). A user account database, accessible by the proxy server, comprises a plurality of user accounts with each of the thin client devices being associated with one or more of the user accounts. Each of the user accounts comprises a device ID (316), a list of public and private keys (326) assigned to the user account, and a list of certificates (320) assigned to the user account. A certificate management module reserves a fixed number of free certificates signed by a Certificate Authority and their respective private keys in a certificate database (328) and frequently updates the free certificate according to a certificate updating message. Whenever a user account is created for a thin client device, the certificate management module fetches one or more free certificates from the certificate database and associates the fetched certificate(s) to the created account and at the same time creates new free certificates with the Certificate Authority to fill in the certificate database.

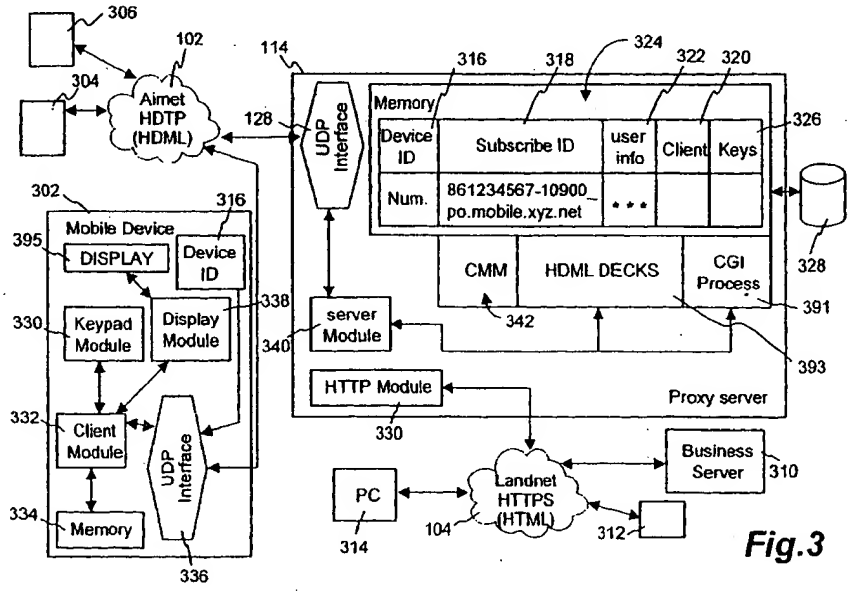

Fig.3

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PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
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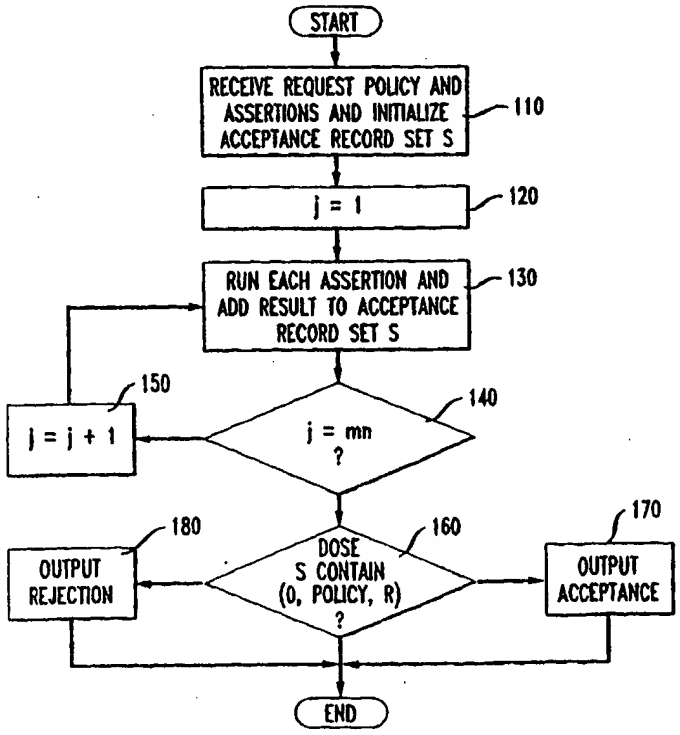
(54) Title: METHOD AND APPARATUS FOR COMPLIANCE CHECKING IN A TRUST-MANAGEMENT SYSTEM

(57) Abstract

A method and apparatus are provided for compliance checking in a trust-management system. A request r, a policy assertion (f_0, POLICY), and $n-1$ credential assertions (f_1, s_1), ..., (f_{n-1}, s_{n-1}) are received, each credential assertion comprising a credential function f_i and a credential source s_i. Each assertion may be monotonic, authentic, and locally bounded. An acceptance record set S is initialized to {(Λ, Λ, R)}, where Λ represents a distinguished null string, and R represents the request r. Each assertion (f_i, s_i), where i represents the integers from $n-1$ to 0, is run and the result is added to the acceptance record set S. This is repeated mn times, where m represents a number greater than 1, and an acceptance is output if any of the results in the acceptance record set S comprise an acceptance record (0, POLICY, R).



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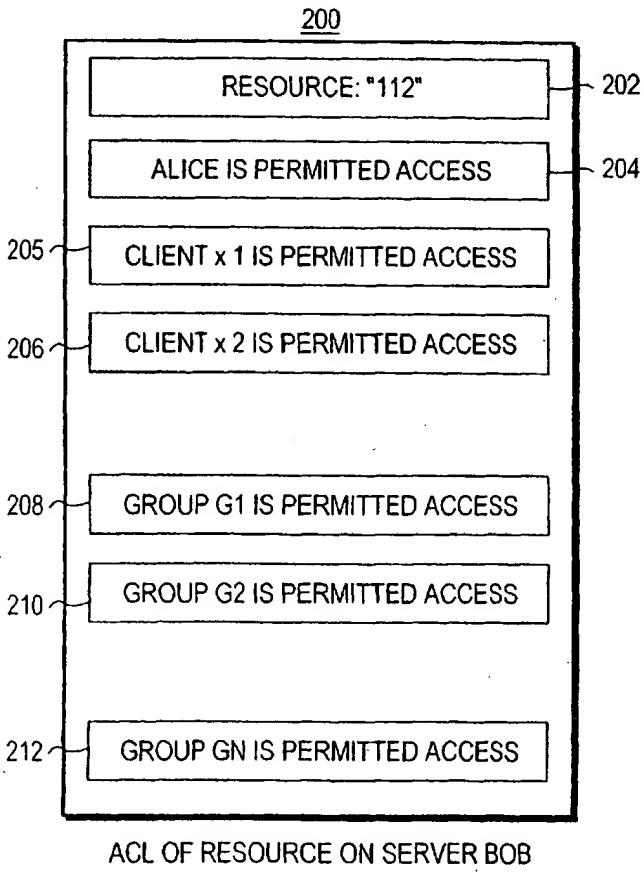
[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR MANAGING CREDENTIALS



ACL OF RESOURCE ON SERVER BOB

(57) Abstract: The basic concept is that before a resource is accessed, the entity that has the burden of gathering the credentials, pro-actively refreshes the credentials and keeps them current. In one instance, a presenter of credentials, for example, a client pro-actively refreshes the credentials such that at the time of presentation, the credentials meet the resource-specific constraints of a recipient of credentials, for example, a resource server. For each resource that it protects, a resource server typically establishes various constraints such as a recency requirement, which specifies how recently a credential has to have been issued to be accepted as an adequate credential. Other constraints may include maximum certificate chain length, trust level and so forth. In another instance, a recipient of credentials pro-actively gathers and refreshes credentials to prevent un-authorized access to the various resources it is protecting.

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